Hyeronima alchorneoides

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Hyeronima alchorneoides Allemão

Taxonomy and nomenclature

Family: Euphorbiaceae

Synonyms: *Hyeronima caribaea* Urban, *H. chocoensis* Cuatrec., *H. ferrugenea* Tul., *H. heterotrichia* Pax & Hoffm., *H. laxiflora* (Tul.) Muell. Arg., *H. mattogrossensis* Pax & Hoffm., *H. mollis* Muell. Arg., *H. ovatifolia* Lundell, *Stilaginella amazonica* Tul., *S. ferruginea* Tul., *S. laxiflora* Tul.

Vernacular/common names: bully tree (Eng.); pilón, zapatero, ascá (Costa Rica); nancitón (Costa Rica, Nicaragua); sangre de toro, palo curtidor (Guatemala); pantano, pilón (Panamá).

Distribution and habitat

The area of natural distribution is from Belize in the north to the Amazon region and in the West Indies. It is a canopy tree of the humid tropical forest found in lowlands up to 900 m altitude in areas with annual rainfall of 2000-6000 mm and temperatures of 20-26°C. It grows well on poor soils and soils that are acidic and seasonally waterlogged.

Uses

The wood is suitable for heavy construction, interior and exterior, such as structures for bridges, fence posts and railway sleepers. The density is 0.63g/cm^3. It is durable and fairly resistant to termites but difficult to impregnate and prone to decomposition, especially under ground level. Very little is known about the phytochemistry of the genus but it has been reported that the seeds of *H. alchoneoides* contain an oil that is effective against intestinal parasites.

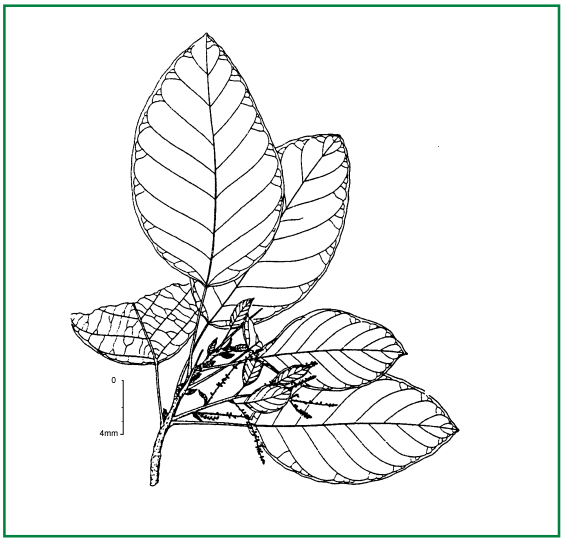
Botanical description

Tall tree up to 50 m with diameter of 1.0-1.2 m. The bark is reddish and the slash light red. The heartwood is dark and easily distinguished from the sapwood. The leaves are alternate, entire, 5-9 cm long and very variable in shape, with large, leafy stipules. Young leaves are green, later turning yellow and nearly red before they are shed. The species is dioecious, i.e. having male and female flowers on different trees. Both male and female flowers are small and yellow-green, in axillary panicles.

Fruit and seed description

Fruit: a one-seeded drupe, 2.5-5.5 mm in diameter, red or dark purple at maturity.

Seed: the seed is very small, surrounded by the stony endocarp. It has a high content of lipid. The endosperm is oily and the embryo large. At moisture content of 67% there are about 26,000 seeds/kg.



Branch with female flowers. From: Flores, 1993.

Flowering and fruiting habit

The flowers are pollinated by small insects and the species has obligate cross-pollination. In many places flowering and fruiting take place two times every year. The time of flowering can vary according to rainfall and altitude and sometimes there seems to be no fixed seasonality of the seed production.

In Costa Rica the trees flower in May-July and sporadically in November-January. The peak of seed production is in January-March.

Harvest

It is best to collect the fruits from the tree by cutting down branches. As the fruits are small it is useful to put tarpaulins on the ground under the tree. The fruits are collected when they have changed colour from green to red indicating maturity and some have begun to fall from the tree. Once mature, the fruits will start to fall and often there are only 3-4 days to carry out the collection. Seed should only be collected from trees with a diameter of 50 cm or more.

Processing and handling

Results indicate that if the seeds are left on sieves in the shade the first 3-4 days after harvest, germination is improved. It is uncertain whether this is due to a need for afterripening or because of a slower desiccation rate.

The fruits can be depulped but in many places this is not done and it is possible that the fleshy pericarp protects the seed from desiccation.

Storage and viability

The seeds are tolerant to desiccation and low temperatures, and should be stored at low moisture content in airtight bags in cold store. But despite their desiccation tolerance the seeds do not store well and more investigations are needed to develop better handling methods. A trial in Costa Rica showed that seeds with moisture content of 3.3% or 6.8% and stored at either 5 or 15°C retained just over 20% viability after 12 months of storage. Before storage the seeds germinated 70-100 % regardless of moisture content.

Dormancy and pretreatment

The seeds are not dormant and need no pretreatment.

Sowing and germination

Germination is epigael. It begins after 25-30 days and is complete about 60 days after sowing. The seeds of this species are sensitive to light and do not germinate in a cabinet with artificial light. Under greenhouse conditions the seeds are sown in boxes filled with sand and after germination the seedlings are transferred to polytubes and placed in the shade. Transplanting must be done carefully as the roots are fragile.

Vegetative propagation with pseudocuttings is also possible.

Immature fruits. From: Flores 1993.

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